

## CONTACT

If you have technical problems, first contact your installer. The following information is required in order to provide you with the necessary assistance:

- Inverter device type
- Inverter serial number
- Type and number of the PV modules connected
- Event number and display message on the inverter
- Optional equipment, e.g. communication products
- Confirmation of whether or not a multi-function relay is used

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### Installer Contact

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## PV Inverter

**SUNNY TRIPOWER 15000TL Economic Excellence**  
**SUNNY TRIPOWER 15000TL High Efficiency**  
**SUNNY TRIPOWER 20000TL Economic Excellence**  
**SUNNY TRIPOWER 20000TL High Efficiency**

User Manual



STP20TLHE-BA-BEN122221 | IMEN-STP20TLHE | Version 2.1

EN

## EXPLANATION OF SYMBOLS

### Symbols on the Inverter

	Inverter	This symbol defines the function of the green LED. The green LED indicates the operating state of the inverter.
	Observe the documentation	This symbol defines the function of the red LED. The red LED indicates a fault. If the red LED lights up, contact your installer.
	Bluetooth	This symbol defines the function of the blue LED. The blue LED indicates that communication via Bluetooth is activated.
	QR-Code®*	By scanning this code, the solar power professional installing the inverter can register the inverter and take part in the SMA bonus programme.
	Danger	There are special requirements for earthing.

\* QR-Code® is a registered trademark of DENSO WAVE INCORPORATED.

### Symbols on the Type Label

	Danger to life due to high voltages	The inverter operates at high voltages. All work on the inverter must be carried out by skilled persons only.
	Risk of burns due to hot surfaces	The inverter can become hot during operation. Avoid contact during operation.
	Observe the documentation	Observe all documentation that is supplied with the inverter.
	DC	Direct current
	Without transformer	The inverter does not have a transformer.
	AC	Three-phase alternating current with neutral conductor
	Proper disposal	Do not dispose of the inverter together with the household waste.
	CE marking	The inverter complies with the requirements of the applicable EC directives.
	Device class ID	The inverter is equipped with a wireless component and complies with device class 2.
	Degree of protection	The inverter is protected against dust deposits in the interior and against splashes of water from all angles.

	Outdoor	The inverter is suitable for outdoor installation.
	RAL quality mark for solar products	The inverter complies with the requirements of the German Institute for Quality Assurance and Labelling.
	Certified safety	The inverter is VDE-tested (Association for Electrical, Electronic and Information Technologies) and complies with the requirements of the German Equipment and Product Safety Act.
	Australian mark of conformity	The inverter complies with the requirements of the applicable Australian guidelines.
	Korean mark of conformity	The inverter complies with the requirements of the applicable Korean guidelines.
	Chinese mark of conformity	The inverter complies with the requirements of the applicable Chinese guidelines.

## GLOSSARY

### Bluetooth\*

Bluetooth is a radio technology that allows the inverter and other communication devices to communicate with each other. For Bluetooth communication, the Bluetooth devices do not need to be within sight of each other.

### DC switch-disconnector

The DC switch-disconnector enables the inverter to be safely disconnected from the PV array. The DC switch-disconnector may be operated by skilled persons only.

### Energy

Energy is the power which a system can supply or consume within a certain time unit. Energy is measured in Wh (watt hours). If, for instance, your inverter feeds in for half an hour at 3,000 W and half an hour at 2,000 W, it will have fed a total of 2,500 Wh into the electricity grid.

### Multi-function relay

The multi-function relay is an optional accessory to the inverter. The multi-function relay acts as an interface for managing a fault indicator or another external load. Depending on the parameters and measured values, the inverter determines when the connected load is switched on and off.

### Power

Power is the product of voltage and electrical current strength. Power is measured in W (watts). The power shown in the display is an instantaneous value. It indicates the power your inverter is currently feeding into the electricity grid.

### PV

Abbreviation for photovoltaics.

\*The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of this mark by SMA Solar Technology AG is under licence.

## SAFETY PRECAUTIONS

### ⚠ DANGER

#### Danger to life due to high voltages in the inverter

Even when no external voltage is connected, there may still be high voltages present in the inverter.

- Do not open the inverter.
- Electrical installation, repair and retrofitting may only be carried out by a skilled person.

### ⚠ CAUTION

#### Risk of burns due to hot enclosure parts

- During operation, only touch the lower enclosure lid and the display.



#### Yield loss due to poor heat dissipation

- Do not place any objects on the enclosure.

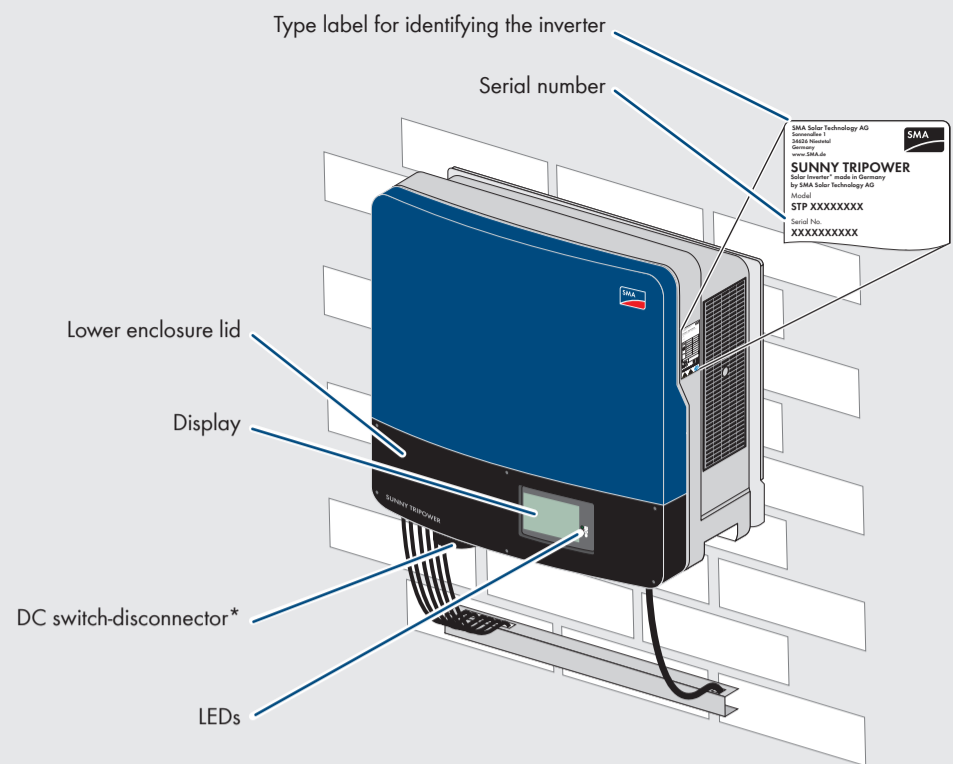
## CLEANING THE INVERTER

### NOTICE

#### Damage to the display by use of cleaning agents

- If the inverter is dirty, clean the enclosure lid, the display and the LEDs using only clean water and a cloth.

## PRODUCT OVERVIEW



\* optional

## DISPLAY

The display updates the measured values of your PV plant every five seconds.

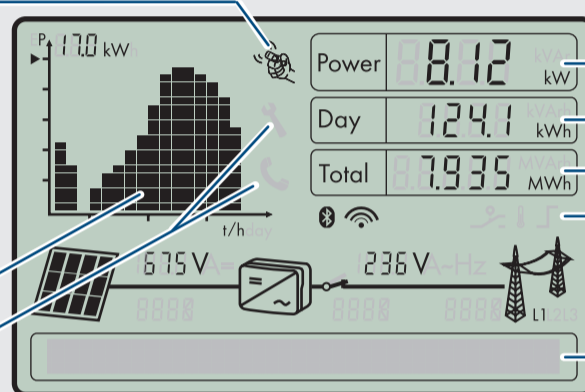
You can operate the display by tapping it:

Tapping once: to activate the backlight, to scroll to the next text line, to switch between the power graph of the last 16 feed-in hours and the energy yields of the last 16 days.

Tapping twice: the display alternates automatically between the firmware version, the serial number of the inverter, the Bluetooth NetID, the configured country data set and display language.

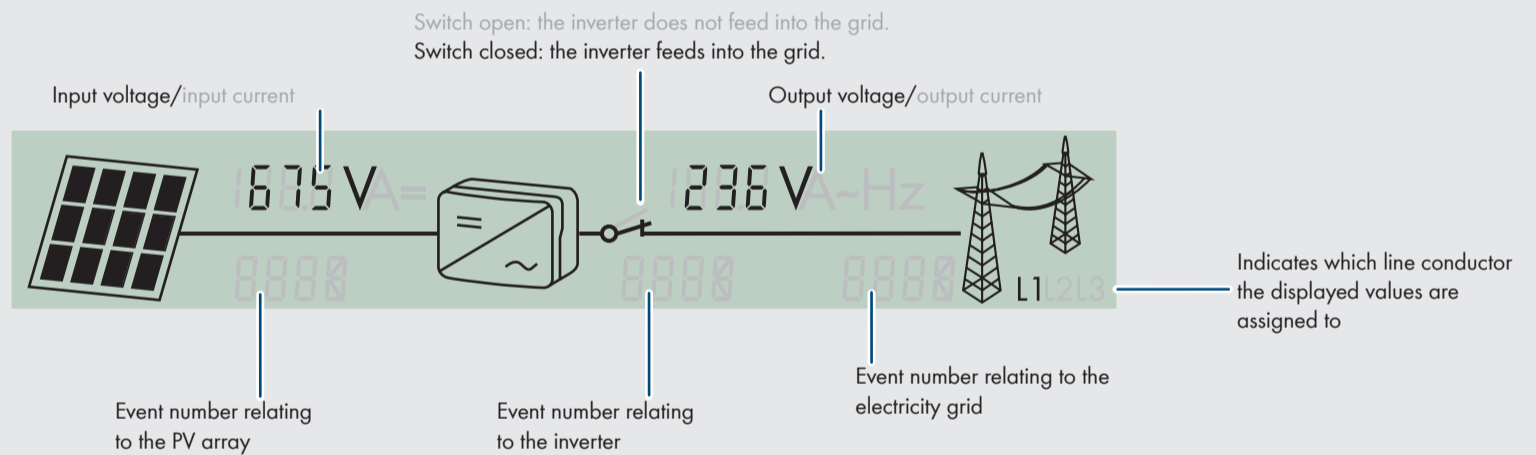
Power and yield curve

An error has occurred: contact installer.

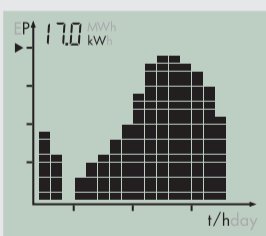


- Current power
- Daily energy
- Total energy generated since the inverter was installed
- Display of the enabled or active functions for communication, grid management services or temperature derating
- Text line to display event or error messages

## PLANT OVERVIEW



## POWER AND YIELD CURVE



The power and energy of the inverter are displayed as diagrams. The daily power graph is displayed by default.

The right-hand flashing bar of the power graph represents the current hour. If the inverter does not feed any power to the electricity grid over a longer period of time (e.g. during the hours of darkness or if the PV modules are covered with snow), a gap is inserted into the chart. The bar for the current hour is updated automatically every five seconds. After four seconds, the bar disappears for one second and then displays the current value.

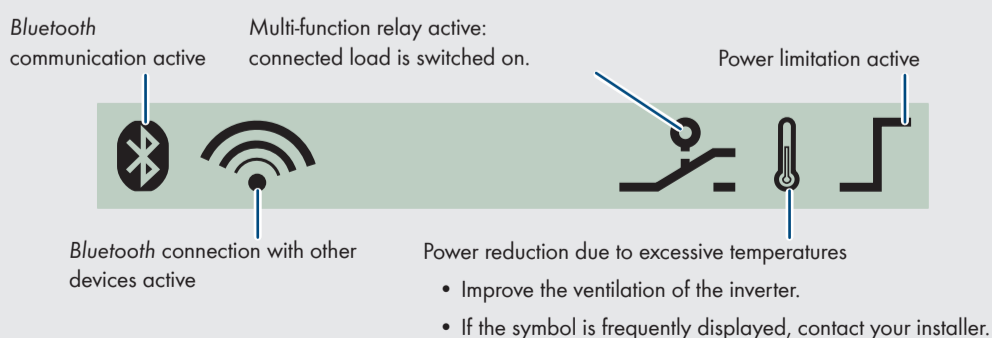
By tapping on the enclosure lid, you can alternate between displays, and the graph will switch to show the energy yields of the last 16 days.

## POWER DISPLAY

The power and energy of the inverter are displayed in the three fields: "Power", "Day" and "Total". The display is updated every five seconds.

Power	8.12 kW	The power that the inverter is currently feeding into the electricity grid.
Day	124.1 kWh	The energy fed into the electricity grid on this particular day. This equals the energy generated from the inverter's start-up in the morning to the current time.
Total	7.935 MWh	The total energy that the inverter has fed into the electricity grid during its entire operating time.

## DISPLAY OF ENABLED FUNCTIONS



- Power reduction due to excessive temperatures
  - Improve the ventilation of the inverter.
  - If the symbol is frequently displayed, contact your installer.

## LED SIGNALS

Green LED is on	The inverter is in operation.
Green LED is flashing	Conditions for grid connection are not yet fulfilled.
Red LED is on	An error has occurred. <ul style="list-style-type: none"> <li>• Contact installer.</li> </ul>
Blue LED is on	Bluetooth communication is activated.
Blue LED is flashing	The inverter has been identified via Sunny Explorer by activating the "Find device" parameter.

## MEASUREMENT ACCURACY

The display values may deviate from the actual values and must not be used as a basis for invoicing. The parameters captured by the inverter are required for operational control and to regulate the current to be fed into the electricity grid. The inverter does not have a calibrated meter.